

THE CLAIMS

Following is a complete listing of the claims pending in the application:

1. (Original) A method for determining the level of at least one polycyclic aromatic hydrocarbon (PAH) in a sample selected from edible oils, edible fats, and components thereof, the method comprising:

- (a) providing said sample in a first solvent in which each said PAH is soluble;
- (b) applying said sample to a gel permeation chromatography (GPC) column;
- (c) eluting said sample with a GPC eluting solvent, effective to provide a fraction containing said PAH which is substantially free of triglyceride and free fatty acid components of said sample;
- (d) injecting said fraction, without isolation, into a GPC/HPLC interface, wherein a solvent in which each said PAH has low solubility is added to said fraction;
- (e) transferring said fraction, without isolation, onto a reverse-phase high performance liquid chromatography (HPLC) column,
- (f) initially eluting said fraction with a solvent in which each said PAH has low solubility,
- (g) separately eluting each said PAH to be detected from said HPLC column with an HPLC eluting solvent,
- (h) detecting said at least one PAH; and
- (i) determining the level of said at least one PAH in said sample.

2. (Original) The method of claim 1, wherein said at least one PAH is selected from naphthalene, methyl naphthalene, fluorene, acenaphthene, acenaphthylene, phenanthrene, anthracene, fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[a]fluoranthene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[ghi]perylene, dibenzo[ah]anthracene, indeno[123-cd]pyrene, benzo[e]pyrene, perylene, benzoperylene, anthanthrene, coronene, and combinations thereof.

3. (Original) The method of claim 2, wherein said at least one PAH includes benzo[a]pyrene.
4. (Original) The method of claim 1, wherein said detecting employs a fluorescence detector.
5. (Original) The method of claim 4, wherein said detecting employs wavelength(s) characteristic of each said PAH to be detected.
6. (Original) The method of claim 1, wherein said first solvent comprises tetrahydrofuran (THF).
7. (Original) The method of claim 6, wherein said first solvent is a mixture of THF and acetonitrile in a ratio of 70:30 or greater.
8. (Original) The method of claim 1, wherein the GPC eluting solvent is THF.
9. (Original) The method of claim 1, wherein said solvent in which each said PAH has low solubility comprises 95 to 100% water and the remainder, if any, acetonitrile.
10. (Original) The method of claim 1, wherein said HPLC eluting solvent is a solvent gradient comprising varying ratios of water and acetonitrile.
11. (Original) The method of claim 3, wherein the level of said benzo[a]pyrene in said sample is less than 1 ppb.
12. (Original) The method of claim 3, wherein the level of said benzo[a]pyrene in said sample is less than 0.1 ppb.

13. (Original) The method of claim 1, wherein the recovery of said PAH from said sample is at least 99%.

14. (Original) The method of claim 1, wherein said injecting step (d) and transferring step (e) are initiated automatically by software control of a valve switching mechanism.

15. (Original) The method of claim 4, wherein said detecting comprises switching said fluorescence detector to said wavelengths for each said PAH, at a predetermined HPLC retention time for said PAH, in an automated manner.

16. (Original) The method of claim 1, wherein said at least one PAH includes at least 10 different PAH.

17. (Original) The method of claim 1, wherein said at least one PAH includes at least 20 different PAH.

18-26. (Cancelled)